

WHAT IS CLAIMED IS:

- Suba 17*
1. A demand radiant heating system comprising:  
an elongated radiant heating tube having an inlet end and an exhaust end;  
5 a burner operatively connected to said inlet end of said radiant heating tube; and  
fuel means operatively connected to said burner for providing fuel to said burner at a plurality of predetermined pressures for demand heating, whereby fuel  
10 and air is mixed and burned by said burner to heat said radiant heating tube and exhaust gases exit said exhaust end.
2. A demand radiant heating system as set forth in claim 1 wherein said fuel means comprises a fuel  
15 regulator having a low fuel pressure for low demand heating and a high fuel pressure for high demand heating.
3. A demand radiant heating system as set forth in claim 1 including temperature means connected to said fuel means for triggering said predetermined  
20 pressures at a plurality of temperature settings.
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4. A demand radiant heating system as set forth in claim 1 wherein said temperature means comprises a two-stage thermostat having a low demand temperature setting and a high demand temperature setting.
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5. A demand radiant heating system as set forth in claim 1 including a burner tube connected to said radiant heating tube.
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6. A demand radiant heating system as set forth in claim 5 wherein said burner has an inlet end, an outlet end, and a venturi shaped tube portion interconnecting said inlet end and said outlet end.

5 *Sub A2* 7. A demand radiant heating system as set forth in claim 6 wherein said inlet end and said outlet end each have a plurality of openings to allow air and fuel to pass therethrough.

10 8. A demand radiant heating system as set forth in claim 6 wherein said inlet end and said outlet end each have a plurality of vanes spaced circumferentially thereabout to swirl air passing thereby.

15 9. A demand radiant heating system as set forth in claim 1 including means disposed adjacent said burner for igniting an air/fuel mixture in said burner and for sensing a predetermined temperature of said burner.

20 10. A demand radiant heating system as set forth in claim 9 wherein said igniting and sensing means comprises a glow bar ignitor.

25 *Sub A3* 11. A demand radiant heating system comprising:  
an elongated radiant heating tube having an inlet end and an exhaust end;  
a burner tube connected to said inlet end of said radiant heating tube;  
a burner at least partially disposed in said burner tube;

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a fuel regulator operatively connected to said burner for providing fuel to said burner at a low fuel pressure for low demand heating and a high fuel pressure for high demand heating, whereby fuel and air is mixed and burned by said burner to heat said radiant heating tube and exhaust gases exit said exhaust end.

*Sub A4*  
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12. A demand radiant heating system as set forth in claim 11 including a two-stage thermostat having a low demand temperature setting for triggering said low fuel pressure and a high demand temperature setting for triggering said high fuel pressure.

13. A demand radiant heating system as set forth in claim 11 wherein said burner has an inlet end, an outlet end, and a venturi shaped tube portion interconnecting said inlet end and said outlet end.

*Sub A5*  
14. A demand radiant heating system as set forth in claim 13 wherein said inlet end and said outlet end each have a plurality of openings to allow air and fuel to pass therethrough.

15. A demand radiant heating system as set forth in claim 13 wherein said inlet end and said outlet end each have a plurality of vanes spaced circumferentially thereabout to swirl air passing thereby.

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16. A demand radiant heating system as set forth in claim 11 including means disposed adjacent said burner for igniting an air/fuel mixture in said burner and for sensing a predetermined temperature of said burner.

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27. <sup>12</sup> A demand radiant heating system as set forth in claim 16 wherein said igniting and sensing means comprises a glow bar ignitor.

5 Sub AG 18. A demand radiant heating system comprising:

an elongated radiant heating tube having an inlet end and an exhaust end;

a burner tube connected to said inlet end of said radiant heating tube;

10 a burner at least partially disposed in said burner tube;

a fuel regulator operatively connected to said burner for providing fuel to said burner at a low fuel pressure for low demand heating and a high fuel pressure  
15 for high demand heating;

a two-stage thermostat connected to said fuel regulation and having a low demand temperature setting for triggering said low fuel pressure and a high demand temperature setting for triggering said high fuel  
20 pressure; and

whereby fuel and air is mixed and burned by said burner to heating said radiant heating tube and exhaust gases exit said exhaust end.

25 19. A demand radiant heating system as set forth in claim 18 wherein said burner has an inlet end, an outlet end, and a venturi shaped tube portion interconnecting said inlet end and said outlet end.

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30 20. A demand radiant heating system as set forth in claim 18 including a glow bar ignitor disposed adjacent said burner for igniting an air/fuel mixture in said burner and for sensing a predetermined temperature of said burner.